

Larned Bushy

1887

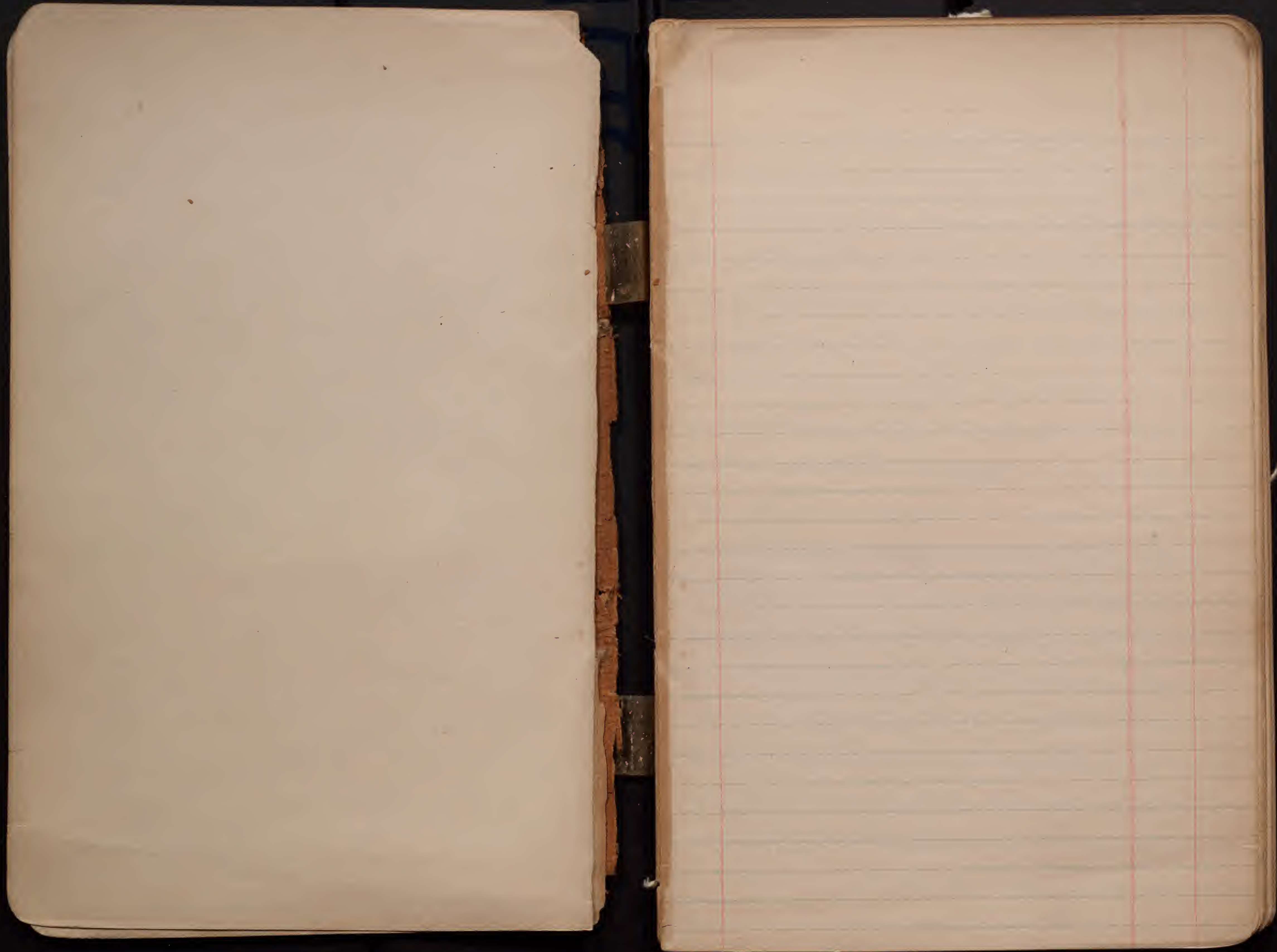
July 26 - Nov. 14

Journal.

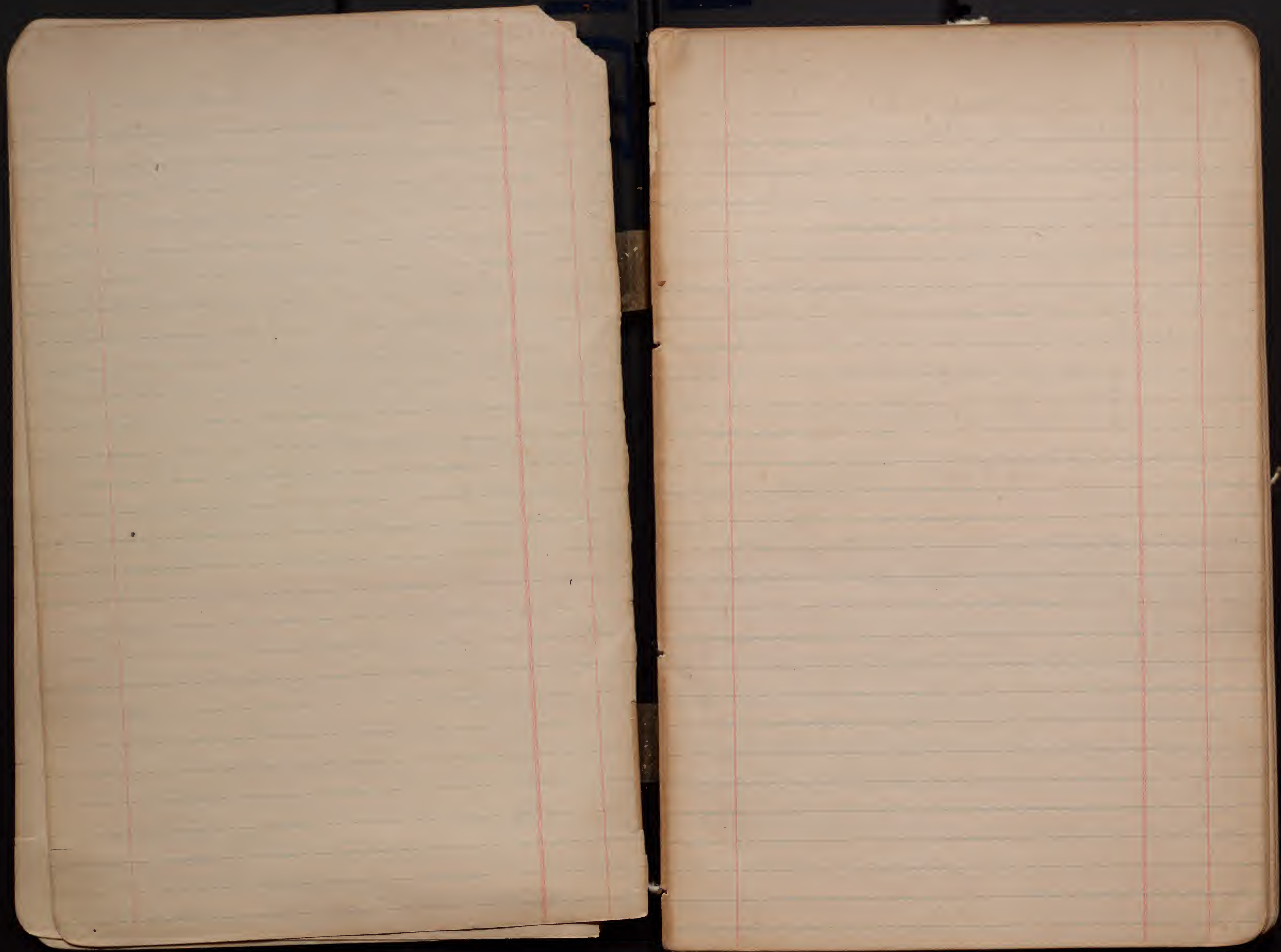
1889.

Vernon Bailey.











1889

July 26 Left Albuquerque at 2 P.M. +  
proceeded to Flagstaff, Arizona.  
Saw Prairie Dogs all along after  
getting onto the mesa W. of Rio Grande.  
Also Dipodomys holes.  
Was dark when we reached Gallup.

" 27 Loafed around town most of day,  
tried to find a horse. Did some  
tramping but no collecting.  
A cool, pleasant day.

" 28 Sunday.  
At the Bank Hotel, Flagstaff.

" 29 Started for Little Spring at one P.M.  
+ reached it about 6. - <sup>20</sup>8 miles.  
Rode through a splendid forest  
of pines + grassy parks.  
Killed an Evening Grosbeak.  
Saw Prairie Dogs in the parks.  
Thomomys all the way.  
A small patch of snow in sight  
on N. side of mountain.

July 30 At Little Spring.

Fixed up camp.

Killed some birds & a Red Squirrel & some Tamias.

Made a few skins & set 14 traps.

~~F~~ 52° after sunrise, Spring water 44°.

" 31. Caught an *Arvicola* & some ~~Thomomys~~ *Thomomys* & *Thomomys*. C.H.M. shot birds & Chipmunks & we made skins most of day.  
A little rain at 2 P.M.

Aug. 1 51°(7) at sunrise. Clear & hot at noon.  
Caught a few mammals, made up the skins & some birds.  
Got 5 bats in evening of 3 species.

" 2 Worked at specimens all day.  
Had a *Sciurus aberti* to put up - a beauty.  
50° in morning.



Aug. 3 Killed 3 Pine Squirrels & a Chipmunk  
& a *Picoides v. harrisi* & *Sphyrapicus*  
*tharoides* & a Hummer.  
Had a lot more birds. Made  
13 bird skins & 5 mammal skins.  
A pleasant day.

" 4 Sunday.  
Took a long ride to Partridge Spr.  
& beyond.  
Carried home some specimens.

" 5 Went around to N. E. side of mountain  
& up high on the base. Found goose-  
berry & strawberry & raspberry bushes  
up there.  
Set 29 traps & caught 6 *Spermophilus*  
*spilosoma* & shot 2 more. Caught  
2 new *Arvicolas* with short tails.  
Killed a Black-tail fawn, & saw  
the old doe in evening.  
Made 7 mammal & 2 bird skins.

" 6 Went to traps before breakfast & got  
7 *Hesperomys* - nothing else.  
Made 9 mammal & 6 bird skins.  
A hard rain began at 5:30 P.M.

Aug. 7 Set 46 traps. Caught 4 *Arvicolas*.  
+ 2 *Spermophiles* + 4 *Tamias laticaudis*.  
Made 5 skins.  
Rained + hailed at 11 A.M.

" 8 Cold in morning - 50°.  
Went to traps + caught 13 *Hesperomys* +  
3 *Arvicolas* + 3 *Tamias laticaudis*, later  
in day caught 4 more *Tamias* + a *Thomomys*  
+ a *Spermophile*, in all 25 mammals.  
Made 18 mammal + 6 bird skins - all  
of us + skinned 5 more mammals.

" 9 Took a trip down to a crater butte  
about 7 miles north. Killed 2 Prairie  
Dogs + a *Sciurus aberti*.  
Showers all around all day, + <sup>it</sup> rained  
hard + hailed in evening.

" 10 Caught a few mammals. Made 14  
mammal skins + 2 bird skins.  
Only rained a little.

" 11 Sunday,  
Stayed at camp all day.



Aug. 12 Am alone again, everyone else gone to snake-dance.

Feel weak & worked slow.

Caught & put up 8 Chipmunks & 5 birds. Added 3 new warblers to our list of birds.

A pleasant day & no rain here.

Measured, catalogued, labeled, skinned stuffed & cleaned the skull of a *Tamias 4 vittatus* in 11 minutes; another in  $11\frac{1}{2}$  minutes.

Got 2 *Thomomys*.

" 13 Caught a lot of Chipmunks & a *Thomomys* & killed a crossbill & an *Accipiter fuscus*. Made 9 skins. Went down to

Bucklers & hired his boy to cook & help around camp.

Havnt felt like ~~to~~ crowding work very fast. A pleasant day, no rain but showers around in evening.

" 14 Have not worked much today. Added two new birds to my list & killed & put up 5 birds & 3 mammals. Found a little lake above the spring, now nearly dry.

A cool day & no rain.

Showers all around.

Aug. 15

Feel better today & set some traps.  
Caught a *Neotoma* & found a new kind  
of Bat dead by water trough.  
Shot some birds & made 6 bird skins  
& 3 of mammals.

Packed a box of skins - mammals.

A cool day.

55° at sunrise & 73° at 2 P.M.

The last bit of snow disappeared in P.M.  
from this side of the mountain.  
No rain here but showers around.

" 16

Caught 2 Skunks & 2 *Neotomas* & 2 Chipmunks.  
Shot a few birds & added a *H. ruficapillus* ♀  
to our list of birds.

Mr. Knowlton came & promptly began  
work on the plants.

It rained hard & hailed & blew for a  
short time in P.M. A cold, damp  
evening.

56° at sunrise.



Aug. 17. Caught 3 Skunks & 2 Neotomas & shot some birds & a Pine Squirrel.

Made 6 bird skins & 5 mammals.

~~Skinned~~ Killed two of the Skunks by breaking their backs & saved their skins.

A Phasant day & no rain.

56° in morning.

" 18 Sunday.

54° in morning. 70° in P.M.

Windy & fall like. There ought to be a wave among birds.

" 19 Shot 7 Hummers before breakfast, made up their skins in A.M.

Hunted & set traps in Kendrick Park in P.M. Saw a large fawn but could not catch it. Shot 7 Phalaropes in Walker lake. Found 3 dead cattle by Walker lake under trees that have been struck by lightning.

Sent our cook to town for mail.

C.H.M. & party returned just in time for supper, after having a hard trip. Were about worn out.

A cool day. no rain.

Aug 20. Got a Goshawk + a Poorwill. + 4  
Thomomys. Made some bird skins.  
Cold morning - 50°. pleasant day.

" 21 made skins most of A.M.  
Chased 6 Antelope out of Hundries Park.  
My horse gained on them while on level  
ground but they ran among stones +  
beat me.  
Went up the Mt. in P.M., not quite up  
to timber line. Got a Kinglet but no  
other new species.

" 22 Caught 3 Thomomys. Put up 5 mammal  
skins in A.M. + 3 in evening.  
Made 8 bird skins.  
Went up to traps in high park in evening  
+ caught an Arvicola + 2 Sorex + a  
Hesperomys.  
Saw 2 Owls - Bubo.  
A cool day, mostly cloudy.



Aug. 23 Made up a few skins early in morning & then started up the mountain.

Eat lunch at 1:30 P.M. near timber line, then went up to summit. Mr. Knowlton's barometer registered 1190 feet at the top but there were heavy clouds & rain on three sides of the mountain.

Saw one small patch of snow on the other side. Snow fell on the top yesterday but only lasted a few hours.

Saw 8 Mountain Sheep across on another ridge. Saw Bear tracks on a popple tree. Caught a long-tailed *Arvicola*, killed a *Dendroica occidentalis*, an *Anthus ludovicianus* & a pair of *Picoides*.

Reached the summit at 3:10 P.M. & home at 7. Rode to timber line.

" 24 Went around to N.E. side of mountain with C.H.M. to get timber altitudes.

Got up to the *Abies concolor*, *Picea engelmannii* & *Pinus balfouriana aristata*.

Saw another patch of snow on N.E. side of mountain. Got a few birds & plants.

Made 4 bird skins in morning & 5 in evening. C.H.M. killed a *Bubo*.

A cool day.

Aug. 30 Came down from mountain where I have been staying since the 26<sup>th</sup> near timber line & about 11000 feet high.

Found two streams of water higher up, It comes from under rocks & is at a temp. of  $33^{\circ}$  (F) where it comes to light.

Caught some *Sorex* & *Arvicolas* along the water courses, got a *Tamias lateralis* above the highest timber, & some *T. 4cittatus* nearly as high. Took *Thomomys* & *Hesperomys* & Pine Squirrels close to timber line. Killed a Golden Eagle on rock at water. It measured 7 ft. 2 in. across wings & 35 in. long.

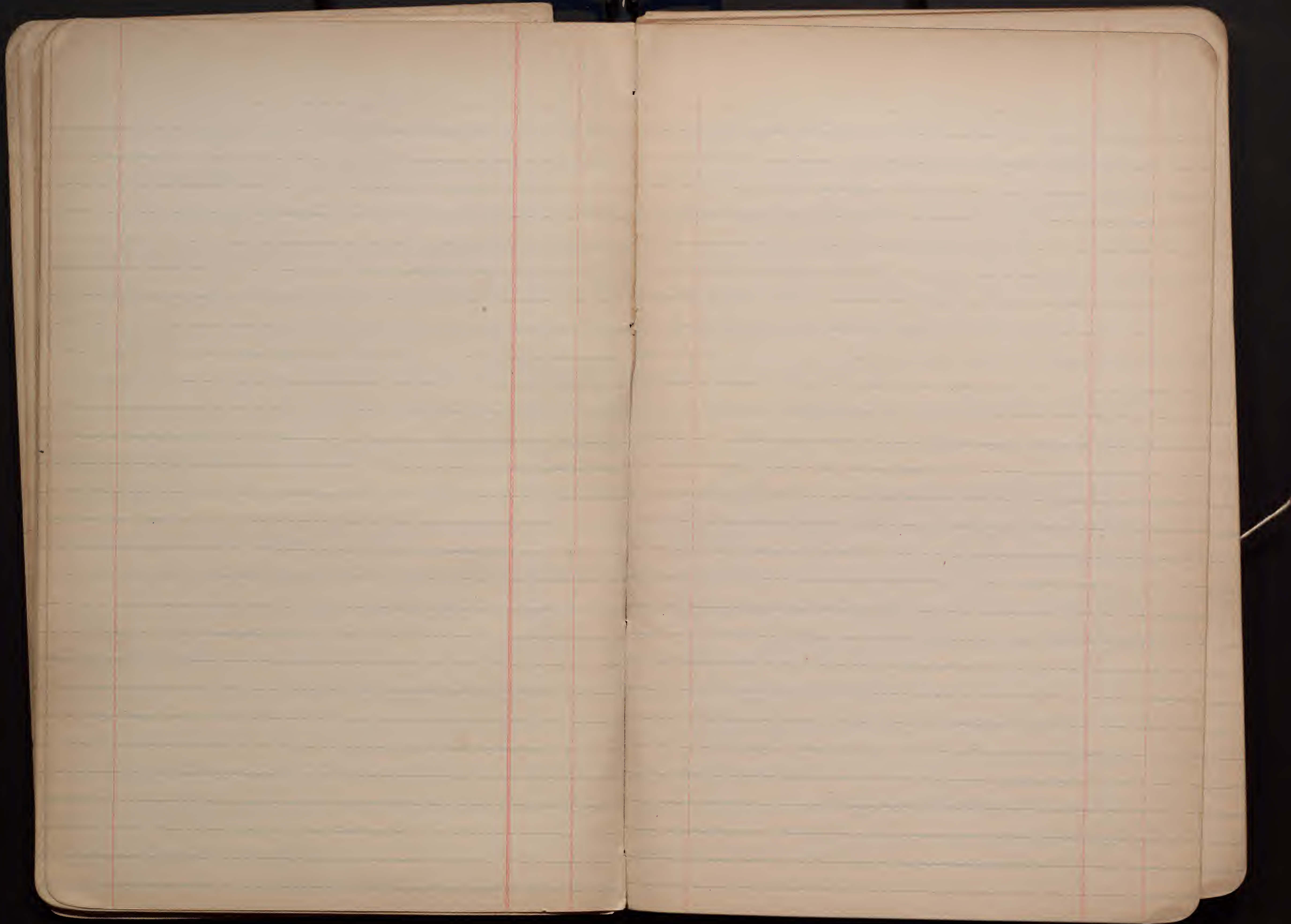
Made but one trip from my camp to the summit. Found Porcupine gnawings but no Porcupines. Saw no game.

Helped C.H.M. eat the Eagle, but it was tough & bad, & foul smelling.

Have not felt well for a week or more & could not climb easily.

There was frost this morning on grass & leaves along the streams. It is much cooler than down at camp.







Sep. 1 Sunday.

" 2 Went down to Cedars to get altitude of tree zones. Got a few specimens.

" 3 Were going to Bill Williams Mt. but couldn't find our horses & so gave it up. Explored the Buttes to the west of camp.

" 4 Went down to a steep red crater N.E. of O'Leary Peak, probably 15 miles. Camped near crater on black cinders at an altitude of near 6000 feet. Set 24 traps in the chaparral brush. Knowlton saw 8 Antelope. The rest of us saw one, tracks common. Killed a *Tamias leucurus*, saw another. Killed two Rabbits of the new species. Had no water except in our canteens.

" 5 Caught an *Oryzomys*, killed some birds, & on the way home killed 3 *S. grammurus* & a *Lepus texensis*. Found lots of Horn Toads. Got home at 6 P.M., tired & thirsty but with a lot of good specimens.



Sep. 6 C.H.M. went to Town, I worked all day on specimens.

A cold day -  $45^{\circ}$  in morning,

A little rain here + hard showers all around. Thunder + lightning.

Sep. 6 to 30<sup>th</sup>, Have been to the Grand Canon + to Moenopie. Haven't kept journal. C.H.M. left Oct. 1<sup>st</sup>

Oct. 1 Broke up our camp at Little Spring + took some grub + my gun + traps + horse + went down to an old AI cattle camp 3 miles N.E. of Partridge Spring + set 28 traps for *Perognathus pusillus*. Saw a ~~herd~~ drove of about 10 Antelope + one alone in another place. Shot a Prairie Dog + caught an *Spermophile spissoma*, skinned there. Made my bed on an old table so the scorpions can't get me. My canteen baked + I have but a pint of water for 24 hours

" 2 Caught 8 *Hesperomys sonoriensis* + a *Neotoma* but no *Perognathus*. Reset my traps + took 8 with me + set along the road in lower valley. Started for Smiths Spring + followed up the cañon as far as I could. Had to turn back where the cañon becomes narrow + rocky + steep, at 7400 feet. *Pseudotsuga douglasii* begins in the cañon here. I found no water except in a little hole dug by a sheep herder in the bottom of the run below the cañon.

Note - All these altitudes are from the barometer with Little Spring at 8,150 as a base, & do not correspond to the map contours.

Afterwards corrected the altitude of Little Spring to 8,250 feet, so 100 feet should be added to all altitudes here given. - com.

Oct.

I drank a little of it but it was so bad Cub wouldn't touch it. Found a dirty Greaser herding sheep but he couldn't talk English nor understand my Spanish. I went back & around east of the little peak & climbed a long, steep road up to the top of the saddle south of it, which is 8475 ft. On top of this saddle I found the first *Pseudotsuga douglasii* & *Pinus flexilis* <sup>& Popples</sup> mixed with <sup>the</sup> *Ponderosa*. The road then goes down the ridge about 100 feet into the basin about Smiths Spring. This is a pretty park basin of some 40 acres. The 4 species of last named trees come down to the bottom all around the sides.

Reached Smiths at 1 P. M. Noone at home. Eat my lunch & went on up the "crater trough", which is too wide for a cañon but a very deep valley.

Followed this about a mile to 8900 feet. At the ranch the stream is small & in the evening was dry. A mile above it is a roaring little creek with water at a temperature of 44.5°.

Going up the bottom of the valley I met *Abies concolor* at 8700 feet. *Pinus ponderosa* stops in the bottom but runs up the N. side - facing S. - 100 feet higher. *Picea engelmanni* begins in the bottom at



8800 feet, & this & *Abies concolor* continue up the valley into the old crater bottom. At 8900 feet I left my horse & went up the N. side of cañon which slopes to the S. E., very steep.

The slope began with only *Pinus flexilis* & *P. douglasii* & popples. *Picea engelmannii* & *Abies concolor* begin on the sidehill at 9300 <sup>of valley.</sup> (Though common in the bottom & on the South side) *Pinus aristata* begins & *P. douglasii* runs out at 9700 feet. *P. flexilis* is still common.

It was getting late & I went no higher. This slope is heavily timbered with conifers & is as steep as stones can lay.

The S. side of valley is a bank of yellow popples with only here & there a bunch of conifers. It would be useless to climb it. *Picea engelmannii* & *Abies concolor* are scattered over the south side - facing N.E. - from where they begin in the bottom at 8700 & 8800 feet upwards.

Came back & camped in the corner of Smith's field. Borrow an armful of oats for a bed. Folks all gone & house locked.

Caught a little speckled snake at 9000 ft. The valley is full of raspberry bushes & must have been a fine place for Bear & Turkeys once. Saw old Bear tracks on popple trees. Saw 4 Eagles.

Oct. 3

Got up & started before sunrise for O'Leary Peak. Left Cut at the base on west side at 7250 feet.

Went around on S. side & climbed it where *Pinus ponderosa* runs up the highest, which is  $20^{\circ}$  W. of S. on a rounded slope.

The mountain is very steep, ( $30^{\circ}$ ) & all loose, fine cinders except the rocky crest & sides of old crater.

On the rounded S.W. side *Ponderosa* runs up to the top & *Pseudotsuga douglasii* & *Pinus flexilis* begin at 8150 feet.

On the W. side of mountain *P. douglasii* & *P. flexilis* begin at 7450 & run to the top all around but on the most exposed S. slope. Here *Ponderosa* & *Pinus edulis* & *Juniperus virginiana* & *circocarpus parvifolia* run up to the top, but are scattering.

On the very top are *flexilis* & *douglasii* & popples, which alone cover the higher N. slope down to 7950, in the crater, where *ponderosa* begins. *Douglasii* & *flexilis* extend down the crater, N., to 7250 & popples to 7500.

The crater is on the same general plan as that of San Francisco Mt. & Kearsage. It opens to the N.E. & has blown out to the bottom. A great circular dikes of lava has filled up, over 200 feet high on the inside at the, at the opening.



+ turned the channel to the W. Much lava has  
flowed out + formed great beds + ridges  
below, but the volcano seems to have blown  
out a vast amount of cinders. The country  
all around, as well as the cone itself, is all  
fine black + red cinders, loose + easily  
heated + with little vegetation except pines  
+ cedars. This cinder region seems to  
extend the range of all of its trees both  
higher + lower. Sunset Peak + a lot  
more nearby are all loose cinders + some  
are perfectly bare of vegetation.

The cedars, as well as *Pinus ponderosa*, have an  
unusual extension down to the N.E. towards  
the little Colorado River. This extension is  
in a wide circle + on the black cinder region.  
*P. ponderosa* covers all the flat land between  
O'Leary + Smiths Spring + around the big  
parks east of O'Leary, but cedars + *Pinus*  
*edulis* extend up the south sides of all  
the buttes that I passed to the tops.

Came around to my house + started home  
at about 3 P.M. Reached the AI camp  
below Partridge Spring a little before  
sundown. Found an *Onychomys* + 5 *Hesperomys*  
*sonoriensis* in my traps. Reset traps +  
camped at old log camp house.

Saw droves of 3 + 11 + 12 + 15 Antelope.

A hot day + water scarce. Saw 2 Bats in evening.

Oct. 4. Got up before daylight & found my horse  
had got loose & gone. Went to traps &  
caught 2 *Hesperomys* sen. & an *Onychomys*  
& a *Perognathus* (apache?) & a *Nedon*.  
Had to walk to Little Spring for my horse -  
about 6 miles - then rode back & get my  
things & back again to Bucklers, where  
where I arrived at about 3 P. M.  
Met George Buckler coming to hunt  
me up. Shot two *Tamias lateralis* &  
saw 3 more. Saw lots of *Sciurus aberti*  
& heard 4 or 5 barking. Have a heavy,  
guttural voice that comes from away  
down their gullet. Shot a Red Tailed H.  
Pitched my tent & skinned things &  
Oct. 5 wrote in evening. A hot day.

" 5 Started up Agassiz Peak in morning.  
At Bucklers the Barometer read  
8350 at starting. *Abies concolor* & *Picea*  
*englemanni* do not show a lower limit here  
as the lower side of the mountain is all a  
treeless park, but a few *Abies concolor* &  
*Pinus flexilis* grow along a run near  
Bucklers house.  
I followed up the W. ridge of Agassiz  
on the slope facing N. W. going up & on the  
S. W. slope coming down.



Popples run up to 9500 feet on N.W. slope & on S.W. slope to 9900 feet. & down to below the ranch. *P. douglasii* runs up to 9200 feet on crest of ridge & as far down as timber comes which is to 8900.

*Pinus flexilis* runs up to 9350 on S.W. slope  
*Pinus ponderosa* extends up to 8850 feet on S.W. side.  
On S.W. slope, *Picea engelmannii* & *Pinus aristata* & *Abies concolor* begin near the same level, at 9350.  
These three form the timber at 10000 feet.  
No *P. aristata* found on the N.W. slope.

The barometer registered 8500 on return to Bucklers, which is 150 feet higher than it read at same place in morning.  
It worked slowly & by jumps when high up & probably did not register near up to the real altitude.

I found no game or specimens that I wanted except a *Tamias 4 vittatus* & Red Squirrel.  
Got back about 2 P.M., made some skins & after supper went up the crater butte in Bucklers field. Started with barometer at ranch at 8475, at bottom of crater on E. side 8300, top of crater butte 8650

Oct. 6 Sunday.

- " 7 Finished my report, packed a few specimens & my trunk so as to send it to town tomorrow or next day while I go around towards Turkey Tank to get altitudes of trees.

Cold, rainy, & windy all day. The top of mountain down to timber was covered with snow in the morning but it all went off from this side by noon.

- " 8 Took a bag of biscuits & left Bustlers in morning. Came to Ft. Masoni & took the first barometer reading for a base. Then struck off east for the S. slope of the mountain, rode my horse up to 9150 feet & then climbed to 10100 where the popples ceased. I could gain nothing more without going to timber line.

Came down & across to the north side of Elden Mt.; Which is not a mesa & is not called a mesa by the people. Did not go up this as it seemed useless & was getting late. So I followed down & around to near Elden Spring.



Oct.

Rode till late, but the moon is full + it is light, camped by an old log + slept with my back to it to keep out of the cold wind.

Saw 15 Deer above Ft. Maroni. Arvicola holes were common on the side of the mountain.

Shot a *Sciurus aberti* to see if its ear tufts had grown, but they had not more than started, shot it with my aux.

A cold windy day, a little snow on the summit in morning.

" 9

Got up before sunrise + started.

Went to Elden Spring + then around the base of mountain east.

Found an Abies like the one at Grand Cañon, on the sides of mountain + a square barked cedar. The mountain is so steep + bare rock that I could not well climb it. There are few trees on it any way + they seem to be all the same from bottom to top.

Went about 10 miles down the Turkey Tank road to where the cedars began + *Pinus ponderosa* stops, then came back to Flagstaff.

Oct.

Sold my horse, wrote up some notes & some letters, sent off the specimens & am ready to start for Prescott in the morning.

The mountain is covered with snow down into timber today & it has been cold all day.

" 10

Left Flagstaff at 5:20 A.M., before daylight. It is cold & frost on everything, ground frozen & ice on ponds. Forgot to take barometer reading as I started. Reached Williams at 7 o'clock & stopped for breakfast. Williams is 6950 feet.

*Pinus ponderosa* extends all along the R.R. to Williams & about five miles beyond where cedars & *Pinus* begin, the barometer registers the same here as at Williams. The cedars are mostly of the square barked species at first.

*Ponderosa* straggles along in the cedars to Fairview at 6450 feet. Below this no *Ponderosa* or *Pinus* seen, & the cedars are all *Juniperus virginiana*. At Fairview begin *Yucca baccata*, Bears Grass, evergreen oaks, & scrub oaks are common.

In the valley at Pinaventa, 5300 feet, there are no cedars, but they may be seen on the hills all the way to Prescott Junction.



Prescott Junction registers 5425 feet.

There are no trees in the valleys, but there are a few <sup>cedars</sup> on the hills on all sides.

Reached Prescott Junction at 11 A.M. + went to the Pioneer house. The Prescott Train had not come in the night before + did not come till 2 P.M. + then returned at 3 P.M. It is a rascally old thing with a patched up engine, can run down hill all right but can't pull up hill.

Started down a narrow, crooked valley + a great rate, but fortunately kept right side up. Passed a lot of Prairie Dog holes 5 miles below Prescott Junction.

Saw a Coyote + a *Felis mexicana*.

The valley widens + there are ranches + some water + finally a small creek.

Grass is good except where pastured too close. There are no trees except a few scrubby cedars on the hills.

At Banghearts, 50 miles from Prescott Junction + 25 from Prescott, a man brought a dozen freshly killed *Lophortyx gambeli* + two Gadwells onto the train.

Had to wait half an hour to get up more steam 15 miles from Prescott + here it became too dark to see.

Reached Prescott at 8 P.M. + went to the Williams house. Prescott is 5500 feet.

Oct. 11 Left Prescott at 8 A.M. on the stage for Phoenix by the Black Cañon road. At Prescott the barometer registered 5400 at starting. Prescott is in a rough group of rocky peaks & mountains. There are *Pinus ponderosa* & cedars & pines & evergreen oak bushes all through & around town. It is very rocky. The *Ponderosas* are small & keep mostly to N. slopes. The cedars are mostly the square barked kind. The hills are covered with Bears Grass.

Thomas' Ranch, 15 miles from Prescott, 4250. No cedars in the valley, or other trees, but can see them on the high hills around. Begin to see *Leptostyx gambeli*.

Mayers Ranch, 35 miles from Prescott, 4550 feet. Stopped here for dinner at 2 P.M. No cedars here. Forms in valley.

Hackberry Creek, 4250 feet, Mesquite (*P. juliflora*) begins here in valley, & *Tamias larrisi* are numerous & two *Minimus polyglottis* seen & some *Harporhynchus crassalis*.

Antelope station, 3900 feet. Polygone trees begin at 3450 feet on S. slope of the Antelope Mts. The trees are small & scrubby.



A long descent over stony roads from top of Antelope Mts. down into valley, with Mesquit + catclaw bushes in the washes + flat *Opuntias* + *Polygona* all along. *Tamias larrisi* seem to be common + their holes are numerous. *Lepus sylvaticus* + *Thomomys* frequently seen + two Coyotes would hardly get out of our road. One was lying in the road + did not get up till the horses were within 100 feet of it + then only walked behind a bush while we passed within 50 feet of it.

Bumble-bee 2650.

Past Bumblebee the road gets rough again + we go up + along Black Cañon + then down into the cañon by a steep rough road. *Cereus giganteus* begin on the rocks about Black Cañon at 2700 feet: are small (not often 20 feet high) + scattering. *Fouquieria spinosa* begins with them + is common all along the road, especially in the most rocky places. It was dark when we reached Bumblebee + objects are dim though the moon is full.

After passing Black Cañon the road is not very rough + follows valleys + washes the rest of night.

Oct. 12 At daylight we are out of the hills  
+ on a levelish plain covered with  
*Larrea mexicana* + grease brush + a  
few Giant cactus + other cactuses.  
Bar, rocky hills are close by rise  
squarely from the plain. 'Tis about  
20 miles to Phoenix + all a smooth  
plain with about 2 inches of fine,  
light dust in the road. There is no  
grass + little vegetation except brush  
which grows in scattered bunches.

*Perognathus* holes + holes of *Dipodops*  
+ *Dipodomys deserti* are numerous, as  
are their tracks. *Lophosyx gambeli*  
are running all around.

Reached Phoenix at 9 A.M. + went  
to the Commercial Hotel, where I found  
Dr. Stejneger had arrived 12 hours  
before. The barometer registered 950  
at Phoenix at noon.

Went down on river flats S. of town + hunted  
in P.M. We each killed a Rabbit + some  
birds, made up skins in evening.

A hot, cloudy day. Rained in evening.

" 13 Sunday. Rained all night + pools  
of water in streets. Lots of *Scorpions*  
<sup>du</sup>  
*mea* in town.

Barometer 850 feet at 7 A.M.



Oct. 14 Left Phoenix at 1 P.M. & arrived in Tucson at 7. Went to the Palace Hotel & stopped for the night.

Barometer at Phoenix at 9 A.M. 650.

" " 1 P.M. 700.

" at Maricopa 3 " 800.

" " Tucson 8 " 1950.

" 15 We found Mr. Brown & had a good talk with him.

The train was late so we did not get off till 3 P.M. & reached Benson at 6 P.M. The train doesn't go south till morning so we have to lay over again.

From Tucson east it is level & rather bare until we begin to go down into the San Pedro Valley. Then it is rough & hilly & deep washes & creeks & the R.R. is very crooked. There are some wet washes along along here & grass in the valley. Yucca & Yuccas & cacti are common all along.

Had a lively ride on a freight.

(Yucca is a phonetic spelling of the common name of *Fouquieria splendens*)

{ Barometer at Benson, 3100 feet.  
 " " Crittenden 3650 "  
 " " Nogales 3400 "

Altitudes taken from a S.P.R.R. guide  
 Yuma 140 feet.  
 Texas Hill 353 "  
 Maricopa 1186 "  
 Tucson 2390 "  
 Benson 3578 "  
 Dragoon Summit 4614 "  
 Bowie 3759 "  
 San Simon 3609 "  
 Sefar 4503 "  
 Gage 4488 "  
 Deming 4334 "  
 El Paso 3713 "

Oct. 16 Left Benson at 7:30 A.M.  
 Followed up the San Pedro Valley to  
 Fairbank. A small stream runs in  
 the riverbed, there are springs & wet  
 marshes & ponds. There is grass in  
 the valley & some ranches.  
 From near Fairbank to Sonora is a  
 smooth, rolling, grassy plain with  
 much stock grazing & ranches &  
 lots of mounds of *Dipodomys*  
 (not deserti).  
 Near Old Camp Crittenden the Santa Rita  
 Mts. are quite high & oaks are  
 common. Then the road runs through  
 a rocky cañon full of Walnut &  
 sycamore trees & Cottonwoods. This  
 cañon is beautiful & has a rapid  
 creek tumbling through it.  
 Oaks run high upon the Mts.  
 The rest of the way is hilly & rough &  
 bare. Some small ranches in the  
 valley. Callabasis is low & the valley  
 is full of wild sunflowers & weeds & sometimes.  
 The upland looks smooth & grassy.  
 Thence we rise in going to Nogales  
 & it becomes rough & stony.  
 Cottonwoods & Walnut trees in valley. Oakes on  
 hills. Nogales is Mexican for Walnut trees.  
 Looked around at Nogales & decided to  
 return to Callabasis.



Oct. 17 Intended to go to Collobasas in morning but were told that there was to be a bull fight here at 4 P.M., so we decided to stay over a day. Hunted down the valley in Mexico till noon. Got each a *Spermophilus grammurus* & some lizards & birds.

Got trailed by an old cow that thirsted for our blood.

Saw some small flocks of Longspurs & some jays. also a *Falco mexicanus*. Skinned our specimens after <sup>noon</sup> dinner & went to the bull ring at 4 P.M. but were told that the fight would be tomorrow or Sunday.

Oct. 18 Reached Callabaras at 10:30 A.M. & secured lodging & got our trunks open & all settled by noon.

Hunted & set traps in P.M., found lots of holes of *Dipodops* & some small holes. Killed some birds.

Shot at bats in evening but didn't get any.

We have a good place to work, the flats all around are covered with weeds or grass & there is a small creek & some ponds. Along the hills are lots of Mesquit trees & some cottonwoods on the flats.

Oct. 19 Went to traps & found just one *Dipodops*.  
Hunted all of forenoon & killed a bag  
of birds, but found no mammals.  
Killed a *Geococcyx californica* at  
12 o'clock & found its stomach full  
of large grasshoppers & nothing else.  
Skinned birds west of P.M.  
The weather is beautiful, warm days &  
cool nights.

" 20 Sunday. Went to the old church  
of the Mission de San Juan de  
Tumacacori, ~~ten~~ miles down the  
valley towards Tucson. Found it an  
interesting pile of old ruins &  
Dr. Stejneger took 9 photos of it.  
Saw 5 *Spermophilus grammurus* &  
a big Jack Rabbit.  
Got back late with sore feet.  
The valley is quite pretty in places,  
with large cottonwoods & walnut  
trees along the creek & Mesquit trees  
over most of the flats. The grass  
is good & lots of cattle run  
in the valley. There are Mexicans  
living on small ranches here & there  
live in little adobe houses & raise a  
few beans & squashes & red pepper  
& some barley & wheat.



Oct. 21 Set 34 traps in forenoon & killed a few birds. In P.M. made 2 *Hesperomys* & 9 bird skins.  
A pleasant day.

" 22 Went to traps in morning & caught a Skunk & an *Onychomys* & two *Perognathus* & 4 *Dipodops* & a *Hesperomys*. Made up all of the skins except the Skunk. Baited my traps again in evening. The ants carry off all the bait through the day.  
Dr. Stijneger killed a *Dipila acuta* & two *Calcearius ornatus*.

" 23 Went to traps & got 3 *Dipodops* & a little *Perognathus* & a Skunk & shot a Jack Rabbit.  
Dr. Stijneger killed a cotton tail & 4 *Gramurus*.  
Caught a *Thomomys* in evening.

" 24 Caught 5 *Dipodops* & 3 *Perognathus* & an *Onychomys*. Took up my traps on the flats & in the Mesquit brush on south side of valley & set out 20 in evening on the east side of valley in a wash. Set most of them for *Perognathus* & mice at holes under mesquit brush.

Skinned the specimens + some from yesterday's lot. Worked till 9 o'clock in evening. Got up at 6 in morning. We added 6 new birds to our list + a new snake.

Oct. 25 Caught 2 *Hesperomys sonoriensis* + two *Peromyscus* + 2 *Dryomys* + 2 *Thomomys*.

Went up to top of a high hill about 4 miles N.E. of the hotel. The barometer registered 2950 feet at starting at 8 A.M., + on the peak at 11:30 4550 feet.

Returned to the hotel at 2 P.M. at 3150. The hill is rather bare + stony without trees. *Fouquieria splendens* + *Agaves* + *Cacti* + *Yuccas* are common on it. Saw one Deer near the top + tracks of more.

Shot a *Rhynchophanes macrourus* from a flock of about 40 + saw a few *Otocoris*. Saw + shot of a *Lepus texianus*. Found no *Spermophiles* or *Tamias*. Found lots of holes of a big *Dipodomys* + set some traps for them in evening. Set 24 traps after sundown.



Oct. 26 Caught 2 *Dipodomys* & a *Dipodops*.  
Made up these & a few skins I had  
from yesterday. Set more traps &  
hunted in P.M., but without much  
success. Found a *Speotyto* in the  
*Dipodops* holes.

27 Sunday -

28 Caught some *Dipodomys* & had  
a few other things to skin.  
Hunted a little while & set some  
traps towards evening.  
Dr. Stejneger shot at a Coyote that  
was found hunting among *Dipodomys*  
holes.  
Wrote some on my report in evening.

29 Caught 6 *Dipodomys* & made up  
the skins. Then packed the specimens  
& packed my trunk. Finished my  
report & wrote letters in evening.  
We are ready to leave Calobasco  
tomorrow.

Oct. 30 Dr. Stineger went to Ft. Huachuca in morning & I took a later train for Nogales. The customs officers would not let my traps pass without paying 10¢ a pound duty on them & as the time was fasted for paying duty, they said I would have to wait till tomorrow. Finally, after much delay & jabbering among themselves, they said I could take them through if I wouldn't sell them. They emptied my trunk & pulled everything to pieces & left me to pack it over. I finally got things packed in time to take the 7 P.M. train for Magdalena, Mexico, & arrived there at 12 P.M. Bought \$26.00 Mexican money for \$20.00 of Uncle Sams at Nogales. The fare from Benson to Nogales is 10¢ a mile.

From Nogales to Magdalena there are three rates; 1st, 2d, & 3d class, of \$3.00, 2.25 & 1.80 for the 60 miles. As this is in Mexican money the real cost is 30¢ less. I took 2d class fare & enjoyed riding on a cushionless seat. Otherwise it was good.



It was moonlight till nearly 12 o'clock  
& I could see that we were following  
down a crooked valley bounded  
by rough hills. There were trees  
all along the valley, that for a  
ways seemed to be oaks, but  
were finally replaced by cottonwoods  
& willows. I could see a few little  
reaches along the road, but there  
seemed to be no towns before  
reaching Magdalena.

The night was so cold that I  
nearly froze in the car & my teeth  
chattered on the way from the depo  
to a hotel.

Oct. 3/ Woke up in a town I had never seen  
& began to make its acquaintance.  
Tramped through town & down the  
valley & out on the hills to see  
where I wanted to locate. Found  
I could work all sides as well  
from town as anywhere, so I hired  
a room & got my trunk & in P. M.  
took a tramp of several miles over  
hills & through washes east of town.  
Killed a Flicker, Quail, *Harporhynchus*,  
*Poliophtila*, & some *Buccones*. Saw  
a Cottontail & several Jack Rabbits.

Found holes + various signs of small mammals. On the whole the prospect seems good.

Many species of plants are new to me especially the Cacti. A flat bared Opuntia reaches a height of 15 or 20 feet. Giant Cactuses are abundant + a smaller species of the genus, from 6 to 10 feet high. Palm trees are growing in town yards, + some orange trees are full of fruit, while Pomegranates are abundant + very cheap.

Magdalena has the appearance of being a very old town, is all of adobe buildings + the dwelling houses all have large courts in the middle.

I have found but one man in town other than Mexican or Chinese, + he is a Jew. Have found 2 or 3 Mexicans who talk a little English + so get along very well. The board at the Hotel Solora is abominable; Tortillas, beans, + red pepper, all cooked with grease + onions.

A warm day but cold again in evening.



Nov. 1. Cold in morning. Made up a few bird skins & then hunted & set traps. Killed a few birds & skinned them. A not very profitable day.

" 2 Caught 2 *Dipodomys deserti* (?) + 2 Small *Dipodomys* like *agilis*, + 7 *Perognathus* of two species, a large + small kind, + a Skunk with a white stripe on each side + long tail. The big *Perognathus* + Skunk are species new to me + the small *Dipodomys* may be.

Shot a *Polyborus cheriway*, which is a bird new to me. Saw 2 more, the one killed had a string <sup>thread</sup> around its leg.

Made up the 12 mammal skins + went to traps + baited them in evening. Found 2 *Campylorhynchus* in my traps, nothing else. There seem to be no *Chipmunks* or *Spermophiles*.

Saw a big tree lizard in town but didn't dare shoot it.

Saw 2 big Jack Rabbits + a Cotton-Tail but did not get any of them. Lost two traps, by dogs I think. A cold night but pleasant day.

Nov. 3 Sunday.

Took my paper & went down a half mile from town to sit on a point of rocks & write. While there a pair of *Falco mex.* came around near my head & 4 *Colaptes gambeli* nearly ran over me.

An *Auriparus flaviceps* came & picked a little yellow berry with its bill & placing it in its right claw, rested its Tarsus across the branch & held the berry while it picked off the pulp. Then gave the seed a flip & picked another. This one it took in its left claw & proceeded as before. I watched it eat 6 berries in this way, changing feet each time.

Saw a pair of *Columbigallina passerina*.

" 4 Went to traps early & got an *Onychomys* but nothing else new.

Made 10 mammal & 2 bird skins.

Rained a little in morning & wind blew all day. rather chilly & all the Mexicans are shivering.

Went out later & set a few more traps & hunted for rabbits without success.

Found 3 *Campylorhynchus* roosting in their nests after sundown.

These nests always seem to be kept in repair & are probably used to roost in.



Nov. 5. Caught some *Perognathus* + *Dipodomys*  
+ a *Thomomys* + shot a Rabbit + two  
*Sigmodon* + a Texas cardinal Grosbeak.  
Made up all of the skins.  
A cold morning + hardly warm  
enough to be pleasant during the day.

Nov. 6. Went to traps + found a *Thomomys* +  
a *Dipodomys* + a *Hesperomys eremicus*, +  
a *Perognathus* + a *Neotoma* + a *Sigmodon* in  
them. Then went on to the Mts. S. E.  
of town, about 6 miles. Shot two  
*Lepus texianus* + saw 4 more.  
The mountains are about 1000 feet  
higher than town + have no timber except  
mesquite + Jersey Tea, are rocky + steep.  
Had hard work to climb to the top.  
Found a lot of snail shells on top, all  
old empty ones, couldn't find any alive.  
Killed one *Junco* + saw more; saw  
Deer tracks + one horn, a small one.  
Killed one *Tamias larrisi* on the rocks,  
saw no more, It was cold + windy.  
Shot one *S. grammurus* on the rocks  
+ killed a few birds.  
Started about 7 A.M. + got back about  
4 P.M. Have a good bag full of stuff  
to skin.

Nov. 7. Skinned yesterday's game which took most of the day.  
Got boxes ready for packing + wrote part of my report in evening.

" 8 Packed the specimens + my trunk + finished my report.  
Got things to the depo + ready to start for Guaymas at midnight

" 9 It is 426. kilometers from Nogales to Guaymas, From Magdalena 340 K., from Carbo 218 K., + from Hermosillo 145 K.

It began to get light about an hour before reaching Carbo + we were running over a straight, level road down the Sonora River Valley.

The hills have passed + the smooth valley covered with Mesquits, Catclaws, Iron tree, Palo verde, + Cactus stretches away on each side to a width of nearly 20 miles, I should think.

There is very little grass or small vegetation + the ground is mostly bare under the trees. All of the trees are short, round-topped forms +



The valley looks like an orchard.

Low & extremely rough mountains are on both sides but some with timber on or high.

We do not see the river till we cross it at Hermosillo. Here there are large canes, or bamboos, along the river & ditches.

No farms seen until near Hermosillo where they raise alfalfa, sugarcane, & some nice large orange groves.

The oranges are not ripe, but are a pale yellow & looked good. I bought one & ate part of it but it was not good. Palm trees are common about the town.

Near Carls, I saw several quail flying. Turkey Buzzards & a few all along to Hermosillo. Here there were about 100 of them in town, flying around & sitting on buildings, & I found they were not Turkey Buzzards at all, but some other large culture.

Saw a few Mexican Jack Rabbits along the road & some Dipodomys holes & lots of Perognathus holes & some Thomomys hills. Birds were scarce. At Hermosillo we turned off from the river valley & followed another

wide, level valley to Guaymas.

There is not much change of country, the plants change gradually & new species of cactus appear while others vanish. Giant cactuses are hardly seen all day, but 3 smaller giants take their place. Trees & brush grow thicker as we near the coast & there are some farms, one large field of cotton. Near the coast it is rocky & very rough & we cross & wind around bays & lakes until Guaymas is reached away out on a narrow strip of flat coast between the rocks & the Pacific Ocean.

Arrived at Guaymas at 5:30 P. M. & went to the Cosmopolitan Hotel.

Two Black tail Fawns were in the station yard at Cadiz & had been taken near there. They were as large as a small sheep & of the same deep gray color as the adults at this season. Were perfectly tame.



Nov. 10. Sunday, At Guaymas.

Took a twalk down the shore & picked up some shells & watched the Gulls & the sharks. Saw one *S. grammurus*. Guaymas is larger than Tucson & seems more of a live place.

Went to a bull fight in P.M. They have one here every Sunday. Staid till they had killed 3 bulls, then left. None of the men were hurt much. It is an exciting scene but barbaric.

" 11 It is so rocky around Guaymas that there is no chance for finding the small mammals that I want, so I took the train at 8 A.M. & went back about 30 miles to Ortiz where I found a sandy valley & rocky hills, which give a country where the different mammals can live. Could have stopped nearer to the shore but not in so good a place nor a place so convenient to stay.

Reached Ortiz at 10 A.M. & set a few traps & killed one *Speotyphlus grammurus* before dinner. In P.M. set the rest of my traps & killed some birds.

A warm day but pleasant, Foggy at Guaymas in morning.

There is a little white tailed jawn at Ortiz.

Nov. 12 Caught 4 *Perognathus* & a *Dipodomys*  
& a *Thomomys*. A Wild Cat ate  
some things out of my traps & something  
else ate another *Perognathus*.  
Shot two *Spermophilus tridecemlineatus*  
& saw a lot more.

Saw 8, or more, big Mexican Jack  
Rabbits.

In evening set the traps over & shot  
a *Perognathus* that I faked out of a  
hole.

A warm, clear day.

" 13 Went to traps before breakfast & found  
a *Neotoma* & *Hesperomys* & a *Dipodomys*  
& 5 *Perognathus*.

After breakfast skinned all of these  
but 2 of the *Perognathus* before the  
train arrived at 10 o'clock.

Left Ortiz at 10 A.M. for Nogales.  
Saw a few *Spermophilus tridecemlineatus*,  
& saw lots of Jack Rabbits all along  
the road. Reached Carls at

dark. There are large fields of  
grain & sugarcane in the middle of  
the valley east of Ortiz, but not much  
farming near the R. R. anywhere  
before reaching Hermosillo.

50° (7) at sunrise. 90° at noon at Hermosillo.



Nov. 14 Rode all night & got into Nogales at 9 A.M. were 8 hours in making the last 75 miles. Rode over a Mexican & cut his leg off at Magdalena, He died soon after.

Found ice on the ponds at Nogales & a very chilly morning.

The watershed is about 7 miles S. of Nogales. From there the Rio de Sonora flows south & the creek flows from Nogales N. to the Santa Cruz at Calabasas.

Found the U.S. Custom House Officers very civil & obliging. passed my box of specimens through without opening it. Am glad to be back among white men again.

Stuffed & packed the skins collected at Ortiz & wrote in evening.



